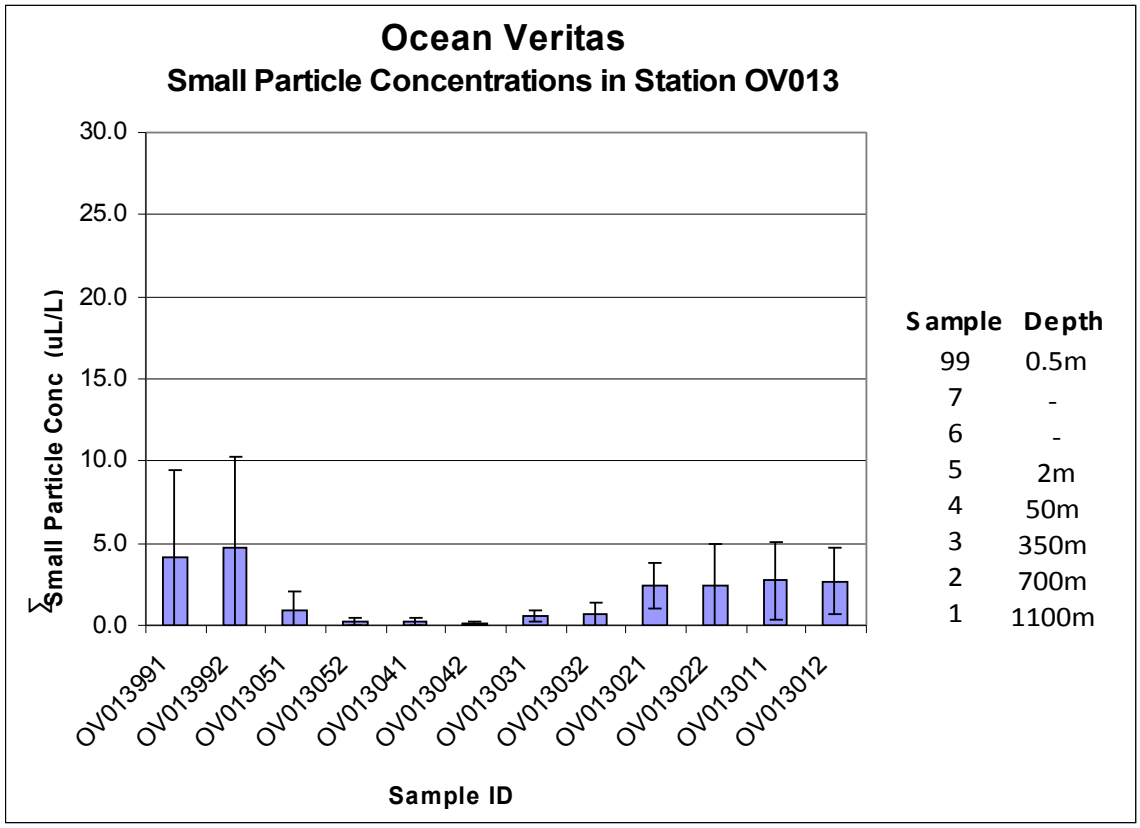
Daily Report: Tracking the Plume of Dispersed Oil using Particle Size Distribution Measurements

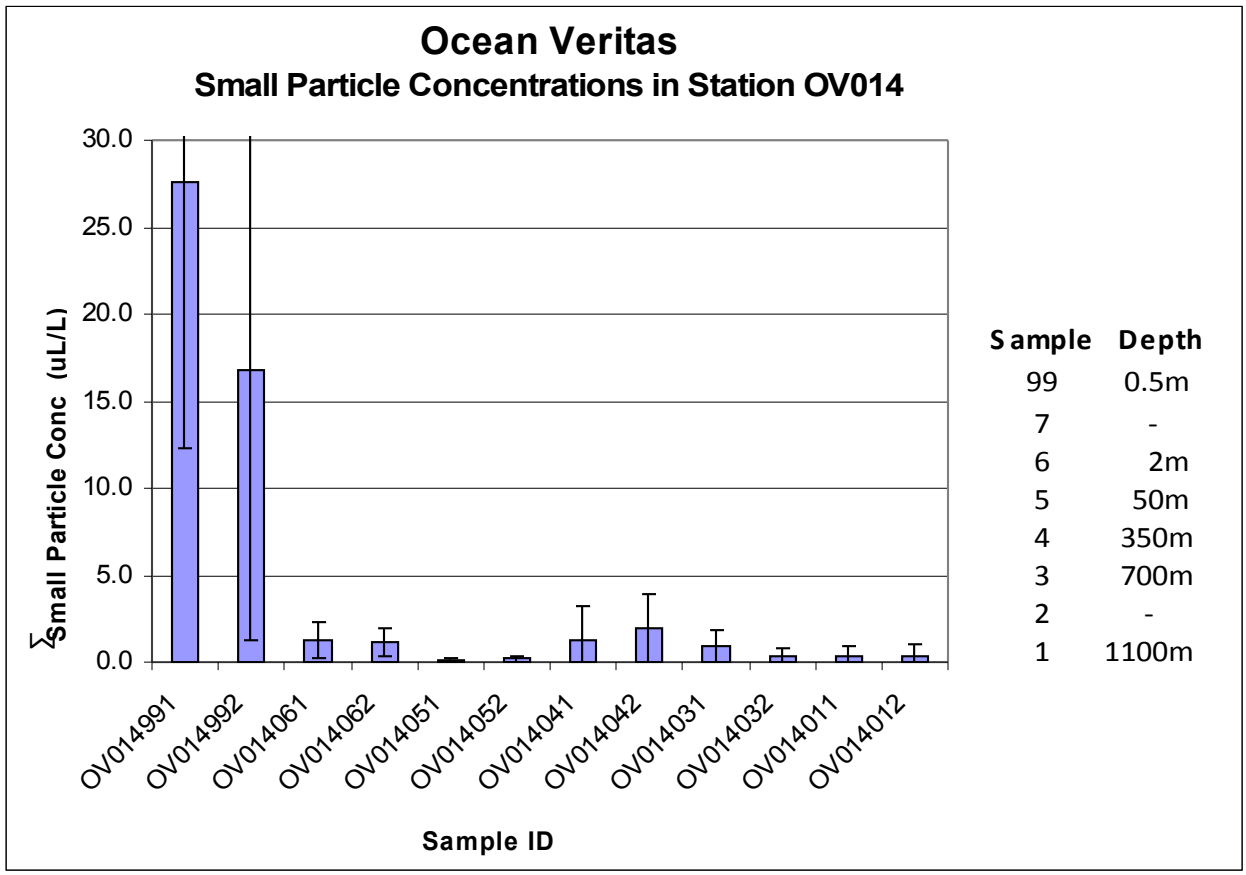
June 2, 2010

Water samples were collected at three stations for particle size distribution measurements using the LISST-100X particle counter. A total of 38 LISST samples were analyzed, including duplicates. Samples were also collected and stored for shore based fluorescence intensity ratio measurements.

Figure 1 presents the small droplet ($\sum$ 2.5 - 60μm) particle size data and fluorescence intensity ratios for stations OV013 through OV016. Station OV013 was approx. 8.4km north northwest of the well head. Station OV014 was approx. 5.0km northwest of the well head. Station OV15 and OV16 were both approx. 2.9km west of the well head.

Moderately elevated concentrations of small particles were detected in the surface sample (0.5m) at Station OV013 and OV015. Extremely elevated concentrations were detected in the surface sample at station OV014. The CTD detected a small plume at Station OV015/016 at 1160m that we did not detect with the LISST (refer to Fig 2). Niskin bottle #2 did not fire so an additional cast was required (OV016) to obtain the sample from the plume at 1160m.


Ocean Veritas
Small Particle Concentrations in Station OV013
Small Particle Conc (uL/L)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
OV013991
OV013992
OV013051
OV013052
OV013041
OV013042
OV013031
OV013032
OV013021
OV013022
OV013011
OV013012
Sample ID
Sample Depth
99 0.5m
7 -
6 -
5 2m
4 50m
3 350m
2 700m
1 1100m


Ocean Veritas
Small Particle Concentrations in Station OV014
Small Particle Conc (uL/L)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
OV014991
OV014992
OV014061
OV014062
OV014051
OV014052
OV014041
OV014042
OV014031
OV014032
OV014011
OV014012
Sample ID
Sample Depth
99 0.5m
7 -
6 2m
5 50m
4 350m
3 700m
2 -
1 1100m

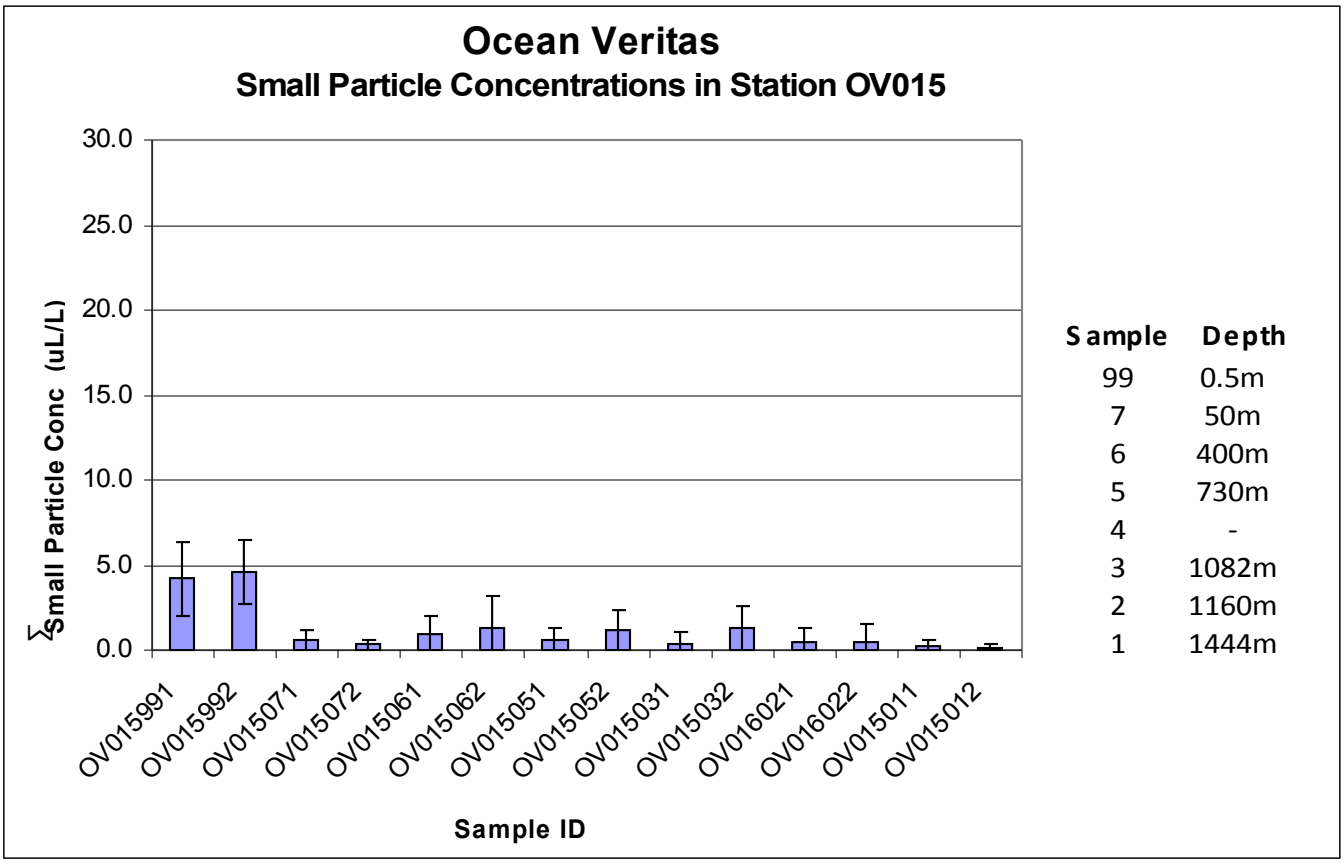


Figure 1: Average small particle concentrations as a function of depth from stations OV009 to OV012.

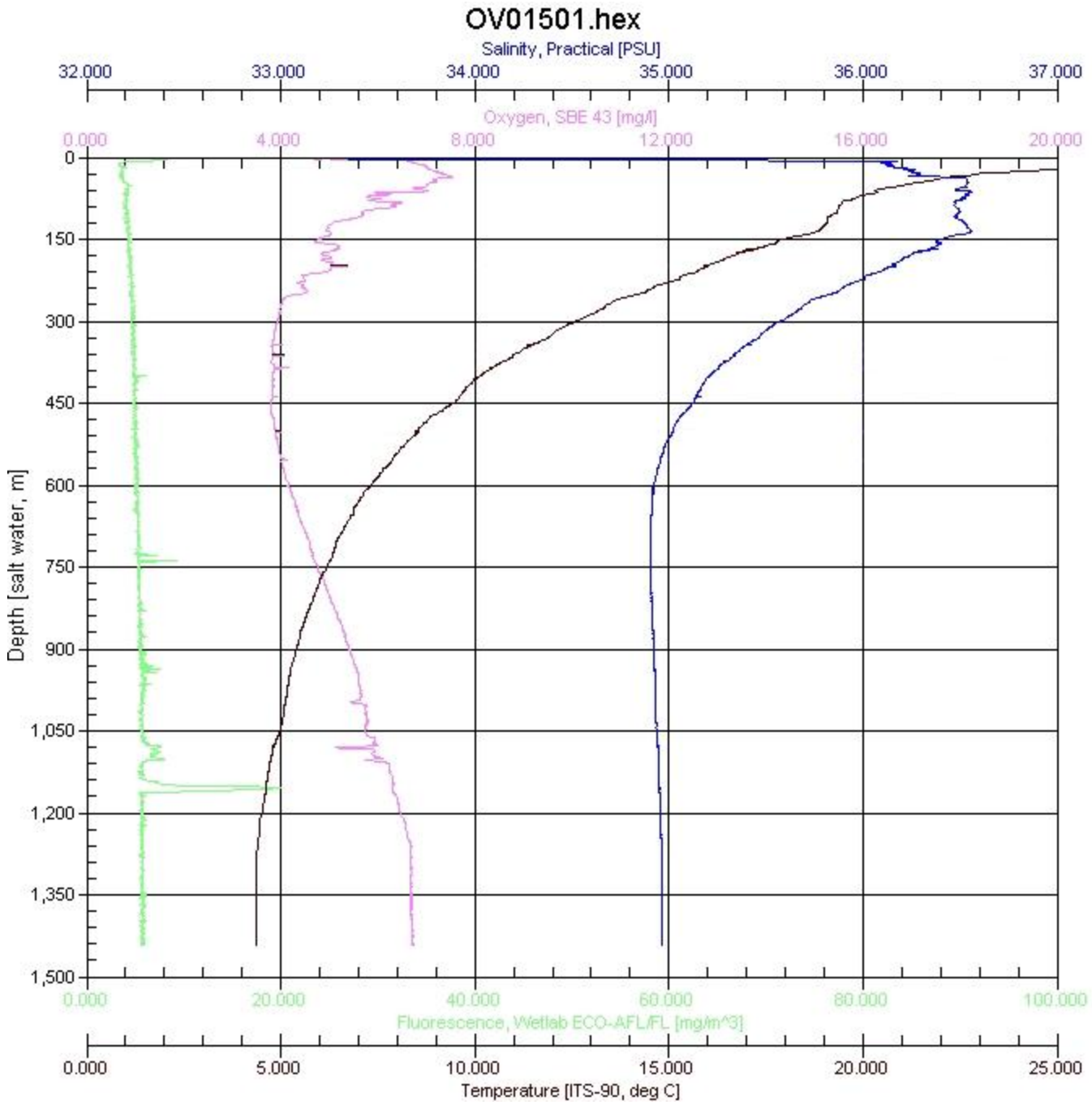


Figure 2: Station OV015 CTD Cast